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Retrospective Study of Seborrhoic Dermatitis Patients at the Dermatology and Venereology Outpatient Installation

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Abstract

Seborrheic dermatitis is a chronic superficial skin disorder occurs in 1-5% of the world's population with the symptom of erythematous plaque with slightly yellowish scaling and without clear border, it caused by multifactorial etiopathogenesis includes sebaceous gland secretion, Malassezia fungi colonization, and immune response. This study aims to determine the profile of seborrheic dermatitis patients in Dermatology and Venereology Outpatient Installation of Dr. Moewardi Surakarta General Hospital in January 2021 - December 2023 period. This study is a retrospective study using medical record data from seborrheic dermatitis patients who visited the Dermatology and Venereology Outpatient Installation of Dr. Moewardi Surakarta General Hospital from January 2021 to December 2023. The data collected included the number of cases, age group, gender, occupation, lesion location, and therapy options. Seborrheic dermatitis affected 76 people. Men are more likely to have seborrheic dermatitis than women; up to 43 patients (56.6%) and 30 patients (39.5%) are adults, the oldest age group with the condition. Up to 27 patients (35.5%) who suffer from this disease are private employees, 43 patients (56.6%) with comorbidities, and up to 65 patients (85.5%) frequently have lesion in their head. The most common therapy given was topical corticosteroid combined with anti-fungal in 38 patients (50.0%). In this study, the topical corticosteroids that were widely used were mometasone 0.1% cream and desoxymetasone 0.25% cream, topical antifungal that were widely used were ketoconazole 2% shampoo and ketoconazole 2% cream. Male adults are most likely to develop seborrheic dermatitis.

Introduction

Seborrheic dermatitis is a skin disorder in the form of chronic superficial inflammation with a predilection for seborrheic areas, namely areas rich in sebaceous glands such as the scalp, face including eyebrows, eyelashes and chin area. This disease also often attacks body folds such as the axillae, breast folds, thigh folds and anogenital areas (Ely et al., 2020; Anggunan et al., 2021). Several factors that can influence the etiopathogenesis of seborrheic dermatitis include excessive sebaceous gland secretion, colonization *Malassezia spp p* and the patient's body's immune response (Marganingsih et al., 2020).

The prevalence of seborrheic dermatitis is estimated at 1-5% of the world population, while the incidence of seborrheic dermatitis in Asia is 2.1% (Anggunan et al., 2021). Based on available research results, the prevalence of seborrheic dermatitis in Indonesia is estimated to range from 6.78% to 26.45%. The highest prevalence was in South Kalimantan province at 11.3%, Central Sulawesi at 10.58% and DKI Jakarta at 9% (Anggunan et al., 2021). Study by

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Edge et al in 2015 in the United States reported the most common incidence of seborrheic dermatitis during puberty and in adulthood around 40-60 years. Men are more often affected by this disease than women with a ratio of 3:2 in all age groups (Sanders et al., 2018). Seborrhoeic dermatitis can occur in all races and the incidence of seborrheic dermatitis reaches 85% in immunocompromised patients, namely in patients with *human immunodeficiency virus* (HIV) (Marganingsih et al., 2020).

The clinical manifestation of seborrheic dermatitis is erythematous plaques with oily white or yellow scales which can be accompanied by itching. Mild seborrheic dermatitis on the scalp in the form of fine scales. The lesions that appear in seborrheic dermatitis spread symmetrically and vary from mild, forming scaly plaques to forming thick, sticky crusts. Clinical symptoms that can appear in the folds of the body are reddish spots, smooth scales and sometimes appear shiny and accompanied by itching (Ely et al., 2020; Marganingsih et al., 2020). A study by Monica PW in 2023 in Indonesia reported a case report of a 38 year old man with seborrheic dermatitis and the clinical picture on the face showed multiple discrete, partially confluent erythematous plaques accompanied by erosion in several parts with thin scale on top (Monica, 2023).

Management of seborrheic dermatitis is divided based on age group, location of the lesion and severity of symptoms. First-line treatment of seborrheic dermatitis is topical therapy, including corticosteroids, calcineurin inhibitors, antifungal drugs, and keratolytics (Sanders et al., 2018) (Dall'Oglio et al., 2022). Medical therapy can be given in combination with topical corticosteroid therapy and topical anti-fungals such as creams *piroctone olamine/alglycera*/bisabolol 2 times a day for 4 weeks, class I topical corticosteroids: 1% hydrocortisone cream or ointment 2 times a day for 4 weeks, topical calcineurin inhibitors: 1% pimecrolimus cream, 0.1% tacrolimus ointment 2 times a day for 4 weeks. In adults with moderate/severe lesions class II topical corticosteroids: desonide 0.05% cream, aclomethasone 0.05% 2 times a day for 4 weeks, systemic antifungal itraconazole 200 mg/day for 1 week and 200 mg/day for 2 days /month for 11 months, terbinafine 250 mg/day for 4-6 weeks or 250 mg/day for 12 days/month for 3 months (intermittent). In areas of the head with mild lesions, topical antifungals are given: cyclopyrox shampoo 1-5%, ketoconazole shampoo 1-2%, hydrogel 20 mg/gel 2 times/week, *non-steroid anti-inflammatory agent with antifungal properties* (AIAFp): pyroctone olamin/bisabolol/glycyretic acid/lactoferrin shampoo 2-3 times/week, keratolytic: salicylic acid 3% shampoo 2-3 times/week (Dessinioti & Katsambas, 2013). This study aims to determine the profile of seborrheic dermatitis patients in the Dermatology and Venereology Outpatient Installation of Dr. RSUD. Moewardi Surakarta.

Methods

This research is a retrospective descriptive study conducted at the Dermatology and Venereology Outpatient Installation of Dr. RSUD. Moewardi Surakarta for the period January 2021 – December 2023. Secondary data comes from medical records of patients with a diagnosis of seborrheic dermatitis at the Dermatology and Venereology Outpatient Installation at RSUD Dr. Moewardi Surakarta. The age range variable used in this research is based on the 2009 Indonesian Ministry of Health Guidelines regarding age, namely children (<10 years), teenagers (10-25 years), adults (>25-50 years) and the elderly (>50 years).

The inclusion criteria in this study were patients with a diagnosis of seborrheic dermatitis based on *international classification of diseases* (ICD-10) L21.9 for seborrheic dermatitis in Dermatology and Venereology Outpatient Installation at RSUD Dr. Moewardi Surakarta for the period January 2021 – December 2023. The exclusion criteria in this study were patients with incomplete data and who did not meet the research criteria. Characteristics of this research in the form of age group, gender, occupation, lesion location and choice of therapy. All results of this research are compiled in table form and explained in narrative form.

Result and Discussion

The results of research at the Dermatology and Venereology Outpatient Installation at Dr. Moewardi Surakarta for the period January 2021-December 2023 found 76 patients with seborrheic dermatitis. The most common gender was male with 43 patients (56.6%), while there were 33 patients (43.4%) female. The age group was dominated by 25-50 years old with 30 patients (39.5%), 26 patients aged >50 years (34.2%), 10-25 years old 11 patients (14.5%) and <10 years old 9 patients (11.8%). The patient's work is dominated by private employees, 27 patients (35.5%), followed by housewives, 18 patients (23.7%), not working, 11 patients (14.5%), students, 10 patients (13.2%), 9 patients were civil servants (11.8%) and 1 patient was retired (1.3%). Seborrheic dermatitis was highest in patients with comorbidities, 43 patients (56.6%), including sufferers *human immunodeficiency virus* (HIV) amounted to 13 patients (17.1%), followed by lung carcinoma in 10 patients (13.1%), *systemic lupus erythematous* (SLE) 9 patients (11.8%), diabetes mellitus 7 patients (9.2%) and pulmonary tuberculosis 4 patients (2.6%), while there were 33 patients without comorbidities (43.4%). The most common location of seborrheic dermatitis was the head area in 30 patients (39.4%), the face area in 23 patients (30.3%), the extremities in 6 patients (7.9%) and the body in 17 patients (22.4%). 38 patients were given topical corticosteroid therapy combined with topical anti-fungals (50.0%), 29 patients (38.2%) received topical corticosteroid therapy combined with topical anti-fungals and oral anti-histamines and 29 patients only received topical corticosteroid therapy. 9 patients (11.8%) (Table 1).

Table 1. Characteristics of Seborrheic Dermatitis Patients

Variable	Category	Frequency (n)	Percentage (%)
Gender	Man	43	56.6
	Woman	33	43.4
Age	<10 years	9	11.8
	10-25 years	11	24.5
	25-50 years	30	39.5
	>50 years	26	34.2
Work	Student	10	13.2
	Private officer	27	35.5
	Housewife	18	23.7
	Civil servants	9	11.8
	Retired	1	1.3
	Doesn't work	11	14.5
Comorbid	Yes	43	56.6
	- Lung carcinoma	10	13.1
	- Human immunodeficiency virus	13	17.1
	- Systemic lupus erythematosus	9	11.8
	- Diabetes mellitus	7	9.2
	- Pulmonary tuberculosis	2	2.6
	No Comorbid	33	43.4
Location	Head	30	39.4
	Face	23	30.3
	A lot	17	22.4
	Extremities	6	7.9
Therapy	Topical corticosteroids	9	11.8
	Topical corticosteroid + topical antifungal	38	50.0

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	Topical corticosteroid + topical antifungal + antihistamine	29	38.2

Seborrheic dermatitis is a skin condition that experiences chronic superficial inflammation and is characterized by scaly, oily skin and can be accompanied by itching. This condition mainly affects areas of the skin that are rich in oil glands, such as the scalp, face and chest. Severe clinical conditions can cause social problems or reduce the sufferer's level of self-confidence (Ely et al., 2020; Anggunan et al., 2021). The etiology of seborrheic dermatitis is currently unclear, but is believed to involve genetic and environmental factors, including breeding. *Malassezia spp p* and abnormal immune responses (Marganingsih et al., 2020; Naldi, 2010).

Seborrhoeic dermatitis occurs throughout the world with a prevalence of around 5% globally. The incidence of seborrheic dermatitis in the United States often occurs during puberty and in adulthood with a risk of being aged 40-60 years. The incidence of seborrheic dermatitis in Indonesia is estimated to range from 6.78% to 26.45% (Anggunan et al., 2021). Men suffer from seborrheic dermatitis more often than women with a ratio of 3:2 in all age groups (Sanders et al., 2018).

The incidence of seborrheic dermatitis increases in the elderly and people suffering from HIV/AIDS with a prevalence reaching 85% (Tucker & Masood, 2024). Seborrhoeic dermatitis is a chronic inflammatory skin disorder that often also attacks young adults (Dall'Oglio et al., 2022). Seborrheic dermatitis often occurs in young and middle-aged adults (Anggunan et al., 2021). This age is a phase of life where individuals experience significant hormonal changes that can affect the activity of the sebaceous glands and increase the risk of seborrheic dermatitis. Stress factors and environmental factors often experienced by individuals in this age range can also contribute to the development of this condition. Seborrheic dermatitis begins during puberty which shows the hormonal influence of androgens on the pilosebaceous unit, which influences sebaceous gland activity and lipid composition and promotes growth. *Malassezia spp p* (Leroy et al., 2023). The age factor can influence the incidence rate of seborrheic dermatitis as much as 14.3% which was reported in Leroy et al.'s study in 2023 in Roterdam with the average age of patients being 67.9 years (Sanders et al., 2018). This study showed that seborrheic dermatitis most often occurred in the 25-50 year age group with 30 patients (39.5%).

Men are more often affected by this disease than women with a ratio of 3:2 in all age groups (Sanders et al., 2018). Men are more frequently affected than women with a peak incidence in the third and fourth decades (Gupta et al., 2004). This can be caused by hormonal differences and the use of different skin care products between men and women (Anggunan et al., 2021). In the results of this study, the gender of seborrheic dermatitis patients was dominated by men, namely 43 patients (56.6%), while the female group was 33 patients (43.4%).

The incidence of seborrheic dermatitis often occurs in private employees which may be caused by several factors including stress, exposure to chemicals and an unhygienic work environment. Private employees often face high work pressure, which can trigger or worsen the symptoms of seborrheic dermatitis. Some jobs in the private sector involve exposure to chemicals that can irritate the skin and trigger inflammatory reactions. A work environment that is unhygienic or damp can be a good medium for fungal growth *Malassezia* and is one of the causes of seborrheic dermatitis. The results showed that the patient's work was dominated by private sector employees with 27 patients (35.5%) and followed by housewives with 18 patients (23.7%).

The incidence of seborrheic dermatitis reaches 85% in immunocompromised patients, namely HIV sufferers (Marganingsih et al., 2020). HIV infection can significantly increase the risk of developing seborrheic dermatitis. Research by Kandou et al in 2016 in Indonesia reported that the prevalence of seborrheic dermatitis in HIV patients could reach 85%, which is much higher than the general population. This is caused by a decrease in the immune system in HIV patients,

making fungal infections easier *Malassezia spp* as one of the causes of seborrheic dermatitis (Fernández & Saiz, 2010). Patients with other immunocompromising conditions such as organ transplant recipients, chronic alcoholic pancreatitis, hepatitis C, and various malignancies are also at high risk of developing seborrheic dermatitis. Lung carcinoma can cause a decrease in the immune system, while SLE is an autoimmune disease that can also increase the risk of seborrheic dermatitis (Marganingsih et al., 2020). This study showed that seborrheic dermatitis sufferers were dominated by patients with comorbidities, 43 patients (56.6%), including 13 patients with HIV (17.1%), followed by lung carcinoma, 10 patients (13.1%), SLE, 9 patients (11.8%), diabetes mellitus in 7 patients (9.2%) and pulmonary tuberculosis in 4 patients (2.6%), while there were 33 patients without comorbidities (43.4%).

The pathophysiology of seborrheic dermatitis is not completely understood, but several key factors are involved in its development and progression. This condition is strongly associated with skin colonization by fungi of the genus *Malassezia spp*. Sebum production is another important factor. Areas rich in sebaceous glands, such as the scalp and face, are more susceptible to seborrheic dermatitis (Schwartz et al., 2013). Free fatty acids promote growth *Malassezia spp* ., which contributes to the inflammatory process. The most common location of lesions in the scalp area is caused by high sebaceous gland activity in this area (Goldust et al., 2015; Tucker & Masood, 2024; Berk & Scheinfeld, 2010; Sobkiewicz et al., 2023). The sebaceous glands on the scalp produce excessive sebum, allowing the growth of the Malassezia fungus which causes seborrheic dermatitis (Kusuma et al., 2019). Lesions on the face generally occur frequently because they have many active sebaceous glands, thereby increasing the risk of seborrheic dermatitis (Dewi, 2022; Tomic et al., 2022).

Facial seborrheic dermatitis also known as facial seborrheic eczema is a common chronic inflammatory skin disorder with a prevalence of up to 10% of the adult population (Dewi, 2022). The clinical manifestation of this disease is characterized by itchy, erythematous, oily, scaly plaques involving the forehead, eyebrows, glabella and nasolabial folds (Naldi, 2010). In severe cases, skin thickening, fissures and extension to other areas such as the cheeks can also occur (Borda & Wikramanayake, 2015). In some cases of seborrheic dermatitis, lesions can also occur on the extremities and body, although the incidence rate is low. This shows that seborrheic dermatitis can spread to a wider area, especially if there are factors such as moisture or infection as well as immunocompromised conditions which can worsen the skin condition (Elisia & Dalem Pemayun, 2019).

The predilection for seborrheic dermatitis is in seborrheic areas, namely areas rich in sebaceous glands such as the scalp, face including eyebrows, eyelashes and chin area. This disease also often attacks body folds such as the axillae, breast folds, thigh folds and anogenital areas (Kandou et al., 2016). The results of the study showed that the most common location of lesions in seborrheic dermatitis patients was in the head area, occurring in 30 patients (39.4%), on the face in 23 patients (30.3%), the body in 17 patients (22.4%) and the extremities in 6 patients (7.9%).

The clinical manifestation of seborrheic dermatitis is erythematous plaques with dry white or oily yellow scales which can be accompanied by itching. Mild seborrheic dermatitis only affects the scalp in the form of fine scales. The spread can occur symmetrically and vary from light, forming scaly plaques to forming thick, sticky crusts. Lesions in the folds of the body can appear red, smooth and sometimes appear shiny (Ely et al., 2020; Marganingsih et al., 2020). In some patients with seborrheic dermatitis the clinical picture is that the face appears as multiple discrete erythematous plaques, some of which are confluent, erosion in several parts with thin scale on top (Monica, 2023).

First-line treatment of seborrheic dermatitis is topical therapy including corticosteroids, calcineurin inhibitors, antifungal drugs, and keratolytics (Sanders et al., 2018; Dall'Oglio et

al., 2022). Lesions in areas other than the scalp with mild lesions are given a combination of topical anti-fungals, non-steroidal anti-inflammatory drugs with anti-fungals such as creams *piroctone olamine/alglycera*/bisabolol 2 times a day for 4 weeks, class I topical corticosteroids: 1% hydrocortisone cream or ointment 2 times a day for 4 weeks, topical calcineurin inhibitors: 1% pimecrolimus cream, 0.1% tacrolimus ointment 2 times a day for 4 weeks. In adults with moderate/severe lesions class II topical corticosteroids: desonide 0.05% cream, aclomethasone ointment 0.05% 2 times a day for 4 weeks, systemic antifungal itraconazole 200 mg/day for 1 week then 200 mg/day for 2 days/month for 11 months, terbinafine 250 mg/day for 4-6 weeks or 250 mg/day for 12 days/month for 3 months (intermittent regimen). In areas of the head with light lesions, topical antifungals are given: cyclopyrox shampoo 1-5%, ketoconazole shampoo 1-2%, foaming gel 2%, hydrogel 20 mg/gel 2-3 times/week, AIAFp: piroctone olamin/bisabolol shampoo/ glycyrrhetic acid/lactoferrin 2-3 times/week, keratolytic agents such as 3% salicylic acid shampoo 2-3 times/week (Dessinioti & Katsambas, 2013).

Management of seborrheic dermatitis is divided into mild, moderate to severe degrees. Mild degrees of seborrheic dermatitis may be recommended using therapy such as 1-2% ketoconazole shampoo, *piroctone olamine*, salicylic acid shampoo 3%, selenium sulfide shampoo 2.5% or shampoo *zinc pyrithione* 1-2%, while for moderate to severe seborrheic dermatitis, topical corticosteroid therapy and topical calcineurin inhibitors can be added (Widaty et al., 2020). Combination therapy between antifungals, topical corticosteroids and topical calcineurin inhibitors can be given in cases of recurrent seborrheic dermatitis. Antifungals such as topical ketoconazole are effective treatments for seborrheic dermatitis because they target *Malassezia spp* and limit its growth. Topical corticosteroids can be used as a treatment in combination with topical anti-fungal therapy, however long-term use should be avoided because there are side effects in the form of epidermal atrophy, striae or telangiectasia (Dall'Oglio et al., 2022). This treatment option can treat the signs and symptoms of seborrheic dermatitis. The use of topical corticosteroids together with antifungal agents can provide better results compared to the use of either therapy alone (Dessinioti & Katsambas, 2013). The use of antihistamines in combination with corticosteroids and antifungals can improve the quality of life of patients with seborrheic dermatitis, especially in reducing itching and discomfort (Clark et al., 2015). Seborrhoeic dermatitis patients need to be given education regarding diet and lifestyle as well as good hygiene to prevent recurrence so as to improve the patient's quality of life (Alshaebi et al., 2023; Bishay et al., 2023). The therapy given to patients in this study was in the form of topical corticosteroids combined with topical anti-fungals for 38 patients (50.0%), 29 patients (38.2%) received topical corticosteroid therapy combined with topical anti-fungals and oral anti-histamines. and 9 patients (11.8%) only received topical corticosteroid therapy.

Conclusion

From a retrospective study regarding the profile of seborrheic dermatitis in the Dermatology and Venereology Outpatient Installation of Dr. RSUD. Moewardi Surakarta for the period January 2021 to December 2023 recorded the number of seborrheic dermatitis patients at 76 patients. Seborrheic dermatitis occurs more often in men, namely 43 patients (56.6%) with 30 patients (39.5%) in the adult age group and is dominated by private sector employees, namely 27 patients (35.5%). Patients with comorbidities dominated the incidence of seborrheic dermatitis at 43 patients (56.6%) with the most common location being the head area at 30 patients (39.4%) and the most common therapy given was topical corticosteroids combined with topical antifungals in 38 patients. (50.0%).

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